AMENDMENTS TO THE CLAIMS

1. (Original) A method comprising:

receiving information for a current primitive;

rasterizing the current primitive to a tile, wherein the tile has a corresponding buffer section for storing information pertaining to the tile;

determining whether the tile is currently completely encompassed by a large primitive; and

in response to a determination that the tile is currently completely encompassed by a large primitive, obtaining information pertaining to the tile from a local storage rather than from the corresponding buffer section, thereby reducing buffer section traffic.

2. (Original) The method of claim 1, wherein determining comprises:

processing a code corresponding to the tile to determine whether the code indicates that the tile is currently completely encompassed by a large primitive.

3. (Currently Amended) The method of claim 2, wherein the code indicates that the ~~file~~ tile is currently completely encompassed by a large primitive, and wherein the code comprises information indicating a specific location in the local storage at which information pertaining to the tile is stored.

4. (Original) The method of claim 1, wherein the information pertaining to the tile that is obtained from the local storage comprises compressed information.

5. (Original) The method of claim 4, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

6. (Original) The method of claim 4, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

7. (Original) The method of claim 6, wherein the tile comprises one or more pixels, and wherein the compressed information comprises one or more deltas, which can be used to derive a z value for at least one of the pixels in the tile.

8. (Original) The method of claim 7, further comprising:

using the compressed information to derive a z value for a particular pixel in the tile.

9. (Original) The method of claim 8, wherein the z value for the particular pixel is derived using the following equation:

$$Z_n = Z_s + Z_x * X_n + Z_y * Y_n;$$

where Z_s, Z_x, and Z_y are deltas, X_n and Y_n are x and y coordinates of the particular pixel, and Z_n is the z value for the particular pixel.

10. (Original) The method of claim 1, further comprising:

determining whether the tile is in an initial state; and

in response to a determination that the tile is in an initial state, foregoing accessing of the corresponding buffer section.

11. (Original) The method of claim 10, wherein determining whether the tile is in an initial state comprises:

processing a code corresponding to the tile to determine whether the code indicates that the tile is in an initial state.

12. (Original) The method of claim 10, wherein the tile comprises one or more pixels, and wherein the method further comprises:

in response to a determination that the tile is in an initial state, assigning an initial z value to one or more pixels in the tile.

13. (Original) The method of claim 1, further comprising:

if the tile is not currently completely encompassed by a large primitive, obtaining information pertaining to the tile from the corresponding buffer section.

14. (Original) The method of claim 13, wherein the information pertaining to the tile obtained from the corresponding buffer section comprises compressed information.

15. (Original) The method of claim 14, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

16. (Original) The method of claim 14, wherein the compressed information

comprises z-related information derived in accordance with delta-based z compression.

17. (Original) The method of claim 16, wherein the tile comprises one or more pixels, and wherein the compressed information comprises:

a set of one or more deltas corresponding to a previously rasterized primitive, wherein the set of deltas can be used to derive a z value for at least one of the pixels in the tile; and

a primitive mask comprising information indicating which one or more pixels of the tile are encompassed by the previously rasterized primitive.

18. (Original) The method of claim 17, further comprising:

processing the primitive mask to determine a particular pixel that is encompassed by the previously rasterized primitive; and

using the set of deltas to derive a z value for the particular pixel.

19. (Original) The method of claim 17, wherein the compressed information further comprises a z mask comprising information indicating which zero or more pixels of the tile are not encompassed by any primitive.

20. (Original) The method of claim 19, further comprising:

processing the primitive mask and the z mask to determine a particular pixel that is encompassed by the previously rasterized primitive; and

using the set of deltas to derive a z value for the particular pixel.

21. (Original) The method of claim 16, wherein the tile comprises one or more pixels, and wherein the compressed information comprises:

a set of one or more deltas corresponding to a previously rasterized primitive, wherein the set of deltas can be used to derive a z value for at least one of the pixels in the tile; and

a plurality of primitive masks which, when combined, comprise information indicating which one or more pixels of the tile are encompassed by the previously rasterized primitive.

22. (Original) The method of claim 21, further comprising:

processing the plurality of primitive masks to determine a particular pixel that is encompassed by the previously rasterized primitive; and

using the set of deltas to derive a z value for the particular pixel.

23. (Original) The method of claim 22, wherein each primitive mask is a bit mask comprising one bit for each pixel of the tile, and wherein processing the plurality of primitive masks comprises:

combining corresponding bits from each primitive mask to form a multi-bit value for each pixel, thereby deriving an overall multi-bit primitive mask for the tile.

24. (Original) The method of claim 21, wherein the compressed information further comprises a z mask comprising information indicating which zero or more pixels of the tile are not encompassed by any primitive.

25. (Original) The method of claim 24, further comprising:

processing the plurality of primitive masks and the z mask to determine a particular pixel that is encompassed by the previously rasterized primitive; and

using the set of deltas to derive a z value for the particular pixel.

26. (Original) The method of claim 25, wherein each primitive mask is a bit mask comprising one bit for each pixel of the tile, and wherein processing the plurality of primitive masks comprises:

combining corresponding bits from each primitive mask to form a multi-bit value for each pixel, thereby deriving an overall multi-bit primitive mask for the tile.

27. (Original) The method of claim 1, further comprising:

determining whether the current primitive qualifies as a large primitive;

determining whether the tile is completely encompassed by the current primitive; and

in response to a determination that the current primitive qualifies as a large primitive and the tile is completely encompassed by the current primitive, storing updated information pertaining to the tile in the local storage rather than the corresponding buffer section.

28. (Original) The method of claim 27, further comprising:

updating a code corresponding to the tile to indicate that the tile is completely encompassed by a large primitive.

29. (Original) The method of claim 28, wherein the updated information pertaining to the tile is stored in a specific location in the local storage, and wherein the code is updated to comprise information indicating the specific location in the local storage at which the updated information is stored.

30. (Original) The method of claim 27, wherein the updated information pertaining to the tile comprises compressed information.

31. (Original) The method of claim 30, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

32. (Original) The method of claim 30, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

33. (Original) The method of claim 32, wherein the tile comprises one or more pixels, and wherein the compressed information comprises one or more deltas corresponding to the current primitive, which can be used to derive a z value for at least one of the pixels in the tile.

34. (Original) The method of claim 27, further comprising:

in response to a determination that the current primitive does not qualify as a large primitive, or the tile is not completely encompassed by the current primitive, or both, storing updated information pertaining to the tile in the corresponding buffer section.

35. (Original) The method of claim 34, wherein the tile comprises one or more pixels, and wherein storing comprises:

determining whether the updated information should be stored in uncompressed format; and

in response to a determination that the updated information should be stored in uncompressed format, storing the updated information in the corresponding buffer section in uncompressed format.

36. (Original) The method of claim 35, wherein determining whether the updated information should be stored in uncompressed format comprises:

determining whether a maximum number of primitives rasterized to the tile has been exceeded.

37. (Original) The method of claim 35, further comprising:

in response to a determination that the updated information should be stored in uncompressed format, updating a code corresponding to the tile to indicate that information pertaining to the tile is stored in the corresponding buffer section in uncompressed format.

38. (Original) The method of claim 34, wherein storing updated information comprises:

storing compressed information in the corresponding buffer section.

39. (Original) The method of claim 38, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

40. (Original) The method of claim 38, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

41. (Original) The method of claim 40, wherein the tile comprises one or more pixels, and wherein storing compressed information comprises:

storing a set of one or more deltas corresponding to the current primitive, wherein the set of deltas can be used to derive a z value for at least one of the pixels in the tile.

42. (Original) The method of claim 41, wherein storing compressed information further comprises:

updating one or more primitive masks stored in the corresponding buffer section to indicate which one or more pixels of the tile are encompassed by the current primitive.

43. (Original) The method of claim 41, wherein storing compressed information further comprises:

storing a new primitive mask in the corresponding buffer section; and

updating one or more other primitive masks stored in the corresponding buffer section to indicate, when all of the primitive masks are combined, which one or more pixels of the tile are encompassed by the current primitive.

44. (Original) The method of claim 41, wherein storing compressed information further comprises:

updating a z mask to indicate which zero or more pixels of the tile are not encompassed by any primitive.

45. (Original) The method of claim 27, wherein the current primitive corresponds to a current frame, and wherein the method further comprises:

determining a large primitive size threshold for primitives in a subsequent frame based upon sizes of primitives in the current frame.

46. (Original) A graphics processing mechanism, comprising:

a mechanism for receiving information for a current primitive;

a mechanism for rasterizing the current primitive to a tile, wherein the tile has a corresponding buffer section for storing information pertaining to the tile;

a mechanism for determining whether the tile is currently completely encompassed by a large primitive; and

a mechanism for obtaining, in response to a determination that the tile is currently completely encompassed by a large primitive, information pertaining to the tile from a local storage rather than from the corresponding buffer section, thereby reducing buffer section traffic.

47. (Original) The graphics processing mechanism of claim 46, wherein the mechanism for determining comprises:

a mechanism for processing a code corresponding to the tile to determine whether

the code indicates that the tile is currently completely encompassed by a large primitive.

48. (Currently Amended) The graphics processing mechanism of claim 47, wherein the code indicates that the ~~file~~ tile is currently completely encompassed by a large primitive, and wherein the code comprises information indicating a specific location in the local storage at which information pertaining to the tile is stored.

49. (Original) The graphics processing mechanism of claim 46, wherein the information pertaining to the tile that is obtained from the local storage comprises compressed information.

50. (Original) The graphics processing mechanism of claim 49, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

51. (Original) The graphics processing mechanism of claim 49, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

52. (Original) The graphics processing mechanism of claim 51, wherein the tile comprises one or more pixels, and wherein the compressed information comprises one or more deltas, which can be used to derive a z value for at least one of the pixels in the tile.

53. (Original) The graphics processing mechanism of claim 52, further comprising:

a mechanism for using the compressed information to derive a z value for a particular pixel in the tile.

54. (Original) The graphics processing mechanism of claim 53, wherein the z value for the particular pixel is derived using the following equation:

$$Z_n = Z_s + Z_x * X_n + Z_y * Y_n;$$

where Z_s, Z_x, and Z_y are deltas, X_n and Y_n are x and y coordinates of the particular pixel, and Z_n is the z value for the particular pixel.

55. (Original) The graphics processing mechanism of claim 46, further comprising:

a mechanism for determining whether the tile is in an initial state; and

a mechanism for foregoing, in response to a determination that the tile is in an initial state, accessing of the corresponding buffer section.

56. (Original) The graphics processing mechanism of claim 55, wherein the mechanism for determining whether the tile is in an initial state comprises:

a mechanism for processing a code corresponding to the tile to determine whether the code indicates that the tile is in an initial state.

57. (Original) The graphics processing mechanism of claim 55, wherein the tile comprises one or more pixels, and wherein the graphics processing mechanism further comprises:

a mechanism for assigning, in response to a determination that the tile is in an initial state, an initial z value to one or more pixels in the tile.

58. (Original) The graphics processing mechanism of claim 46, further comprising:

a mechanism for obtaining, if the tile is not currently completely encompassed by a large primitive, information pertaining to the tile from the corresponding buffer section.

59. (Original) The graphics processing mechanism of claim 58, wherein the information pertaining to the tile obtained from the corresponding buffer section comprises compressed information.

60. (Original) The graphics processing mechanism of claim 59, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

61. (Original) The graphics processing mechanism of claim 59, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

62. (Original) The graphics processing mechanism of claim 61, wherein the tile comprises one or more pixels, and wherein the compressed information comprises:

a set of one or more deltas corresponding to a previously rasterized primitive, wherein the set of deltas can be used to derive a z value for at least one of the pixels in

the tile; and

a primitive mask comprising information indicating which one or more pixels of the tile are encompassed by the previously rasterized primitive.

63. (Original) The graphics processing mechanism of claim 62, further comprising:

a mechanism for processing the primitive mask to determine a particular pixel that is encompassed by the previously rasterized primitive; and

a mechanism for using the set of deltas to derive a z value for the particular pixel.

64. (Original) The graphics processing mechanism of claim 62, wherein the compressed information further comprises a z mask comprising information indicating which zero or more pixels of the tile are not encompassed by any primitive.

65. (Original) The graphics processing mechanism of claim 64, further comprising:

a mechanism for processing the primitive mask and the z mask to determine a particular pixel that is encompassed by the previously rasterized primitive; and

a mechanism for using the set of deltas to derive a z value for the particular pixel.

66. (Original) The graphics processing mechanism of claim 61, wherein the tile comprises one or more pixels, and wherein the compressed information comprises:

a set of one or more deltas corresponding to a previously rasterized primitive, wherein the set of deltas can be used to derive a z value for at least one of the pixels in

the tile; and

a plurality of primitive masks which, when combined, comprise information indicating which one or more pixels of the tile are encompassed by the previously rasterized primitive.

67. (Original) The graphics processing mechanism of claim 66, further comprising:

a mechanism for processing the plurality of primitive masks to determine a particular pixel that is encompassed by the previously rasterized primitive; and

a mechanism for using the set of deltas to derive a z value for the particular pixel.

68. (Original) The graphics processing mechanism of claim 67, wherein each primitive mask is a bit mask comprising one bit for each pixel of the tile, and wherein processing the plurality of primitive masks comprises:

combining corresponding bits from each primitive mask to form a multi-bit value for each pixel, thereby deriving an overall multi-bit primitive mask for the tile.

69. (Original) The graphics processing mechanism of claim 66, wherein the compressed information further comprises a z mask comprising information indicating which zero or more pixels of the tile are not encompassed by any primitive.

70. (Original) The graphics processing mechanism of claim 69, further comprising:

a mechanism for processing the plurality of primitive masks and the z mask to

determine a particular pixel that is encompassed by the previously rasterized primitive; and

a mechanism for using the set of deltas to derive a z value for the particular pixel.

71. (Original) The graphics processing mechanism of claim 70, wherein each primitive mask is a bit mask comprising one bit for each pixel of the tile, and wherein the mechanism for processing the plurality of primitive masks comprises:

a mechanism for combining corresponding bits from each primitive mask to form a multi-bit value for each pixel, thereby deriving an overall multi-bit primitive mask for the tile.

72. (Original) The graphics processing mechanism of claim 46, further comprising:

a mechanism for determining whether the current primitive qualifies as a large primitive;

a mechanism for determining whether the tile is completely encompassed by the current primitive; and

a mechanism for storing, in response to a determination that the current primitive qualifies as a large primitive and the tile is completely encompassed by the current primitive, updated information pertaining to the tile in the local storage rather than the corresponding buffer section.

73. (Original) The graphics processing mechanism of claim 72, further comprising:

a mechanism for updating a code corresponding to the tile to indicate that the tile is completely encompassed by a large primitive.

74. (Original) The graphics processing mechanism of claim 73, wherein the updated information pertaining to the tile is stored in a specific location in the local storage, and wherein the code is updated to comprise information indicating the specific location in the local storage at which the updated information is stored.

75. (Original) The graphics processing mechanism of claim 72, wherein the updated information pertaining to the tile comprises compressed information.

76. (Original) The graphics processing mechanism of claim 75, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

77. (Original) The graphics processing mechanism of claim 75, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

78. (Original) The graphics processing mechanism of claim 77, wherein the tile comprises one or more pixels, and wherein the compressed information comprises one or more deltas corresponding to the current primitive, which can be used to derive a z value for at least one of the pixels in the tile.

79. (Original) The graphics processing mechanism of claim 72, further comprising:

a mechanism for storing, in response to a determination that the current primitive does not qualify as a large primitive, or the tile is not completely encompassed by the current primitive, or both, updated information pertaining to the tile in the corresponding buffer section.

80. (Original) The graphics processing mechanism of claim 79, wherein the tile comprises one or more pixels, and wherein the mechanism for storing comprises:

a mechanism for determining whether the updated information should be stored in uncompressed format; and

a mechanism for storing, in response to a determination that the updated information should be stored in uncompressed format, the updated information in the corresponding buffer section in uncompressed format.

81. (Original) The graphics processing mechanism of claim 80, wherein the mechanism for determining whether the updated information should be stored in uncompressed format comprises:

a mechanism for determining whether a maximum number of primitives rasterized to the tile has been exceeded.

82. (Original) The graphics processing mechanism of claim 80, further comprising:

a mechanism for updating, in response to a determination that the updated

information should be stored in uncompressed format, a code corresponding to the tile to indicate that information pertaining to the tile is stored in the corresponding buffer section in uncompressed format.

83. (Original) The graphics processing mechanism of claim 79, wherein the mechanism for storing updated information comprises:

a mechanism for storing compressed information in the corresponding buffer section.

84. (Original) The graphics processing mechanism of claim 83, wherein the tile comprises one or more pixels, and wherein the compressed information can be used to derive a z value for at least one of the pixels in the tile.

85. (Original) The graphics processing mechanism of claim 83, wherein the compressed information comprises z-related information derived in accordance with delta-based z compression.

86. (Original) The graphics processing mechanism of claim 85, wherein the tile comprises one or more pixels, and wherein the mechanism for storing compressed information comprises:

a mechanism for storing a set of one or more deltas corresponding to the current primitive, wherein the set of deltas can be used to derive a z value for at least one of the pixels in the tile.

87. (Original) The graphics processing mechanism of claim 86, wherein the mechanism for storing compressed information further comprises:

a mechanism for updating one or more primitive masks stored in the corresponding buffer section to indicate which one or more pixels of the tile are encompassed by the current primitive.

88. (Original) The graphics processing mechanism of claim 86, wherein the mechanism for storing compressed information further comprises:

a mechanism for storing a new primitive mask in the corresponding buffer section; and

a mechanism for updating one or more other primitive masks stored in the corresponding buffer section to indicate, when all of the primitive masks are combined, which one or more pixels of the tile are encompassed by the current primitive.

89. (Original) The graphics processing mechanism of claim 86, wherein the mechanism for storing compressed information further comprises:

a mechanism for updating a z mask to indicate which zero or more pixels of the tile are not encompassed by any primitive.

90. (Original) The graphics processing mechanism of claim 72, wherein the current primitive corresponds to a current frame, and wherein the graphics processing mechanism further comprises:

a mechanism for determining a large primitive size threshold for primitives in a subsequent frame based upon sizes of primitives in the current frame.